

Fig. 1

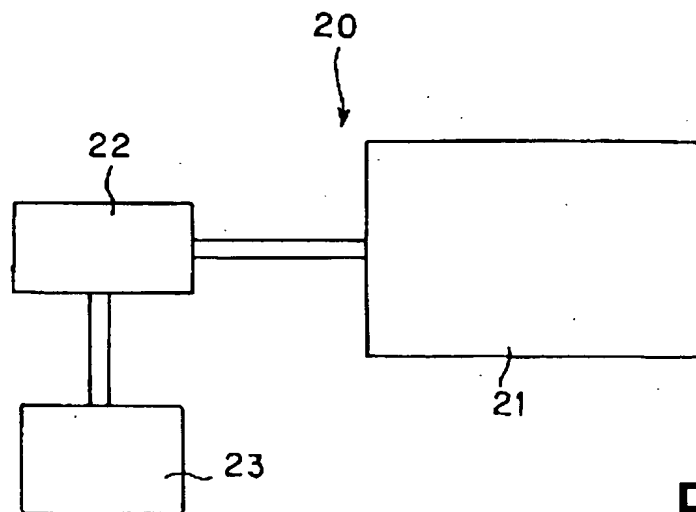
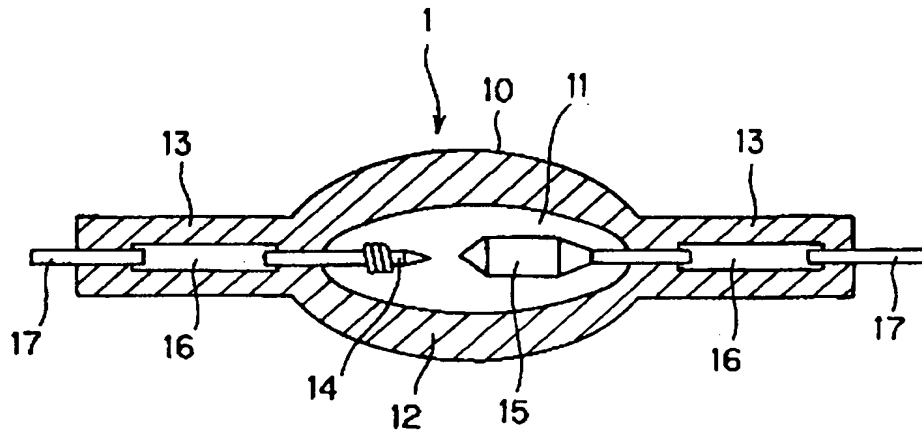


Fig. 2

Fig. 3

| | Hydrogen concentration (wt-ppm) | Al concentration (wt-ppm) | OH concentration (wt-ppm) | Blackening and milky opacification of arc tube | Illuminance maintenance factor | Cracks in arc tube |
|------------|---------------------------------------|---------------------------------|---------------------------------|--|--------------------------------------|-----------------------|
| Example 1 | 1.5 | 3.1 | 0.5 | ○ | ○ | ○ |
| Example 2 | 0.6 | 6.7 | 0.5 | ○ | ○ | ○ |
| Example 3 | 2.7 | 20 | 0.6 | ○ | ○ | ○ |
| Example 4 | 5.5 | 18.2 | 0.7 | ○ | ○ | ○ |
| Example 5 | 17 | 6.5 | 0.4 | ○ | ○ | ○ |
| Example 6 | 61 | 27.1 | 0.3 | ○ | ○ | ○ |
| Example 7 | 22 | 10.2 | 0.3 | ○ | ○ | ○ |
| Example 8 | 0.1 | 7.5 | 0.5 | ○ | ○ | ○ |
| Example 9 | 35 | 19.5 | 0.5 | ○ | ○ | ○ |
| Example 10 | 0.3 | 12.6 | 0.5 | ○ | ○ | ○ |
| Example 11 | 98 | 3.7 | 0.6 | ○ | ○ | ○ |
| Example 12 | 0.38 | 4.4 | 0.5 | ○ | ○ | ○ |
| Example 13 | 77 | 2 | 0.5 | ○ | ○ | ○ |
| Example 14 | 0.2 | 20 | 0.5 | ○ | ○ | ○ |
| Example 15 | 290 | 17.8 | 0.5 | ○ | ○ | ○ |
| Example 16 | 180 | 11.6 | 0.5 | ○ | ○ | ○ |
| Example 17 | 124 | 18 | 0.9 | ○ | ○ | ○ |
| Example 18 | 52 | 30 | 0.6 | ○ | ○ | ○ |
| Example 19 | 290 | 28 | 1 | ○ | ○ | ○ |

Fig. 4

| | Hydrogen concentration (wt-ppm) | Al concentration (wt-ppm) | OH concentration (wt-ppm) | Blackening and milky opacification of arc tube | Illuminance maintenance factor | Cracks in arc tube |
|---------------------------|---------------------------------------|---------------------------------|---------------------------------|--|--------------------------------------|-----------------------|
| Comparative example 1 | 0.05 | 11.9 | 0.5 | ○ | ○ | × |
| Comparative example 2 | 0.08 | 13.7 | 0.5 | ○ | ○ | × |
| Comparative example 3 | 0.02 | 8.5 | 0.5 | ○ | ○ | × |
| Comparative example 4 | 320 | 14.5 | 0.5 | × | × | ○ |
| Comparative example 5 | 520 | 17.3 | 0.5 | × | × | ○ |
| Comparative example 6 | 465 | 11.8 | 0.5 | × | × | ○ |
| Comparative example 7 | 54 | 1.5 | 0.5 | ○ | ○ | × |
| Comparative example 8 | 28 | 35 | 0.5 | Δ | × | ○ |
| Comparative example 9 | 2.5 | 40.5 | 0.5 | Δ | Δ | × |
| Comparative example 10 | 13 | 31 | 0.5 | ○ | Δ | ○ |
| Comparative example 11 | 220 | 52 | 0.5 | Δ | × | × |
| Comparative example 12 | 15 | 8.5 | 6 | ○ | Δ | × |
| Comparative example 13 | 33 | 14.5 | 2 | ○ | Δ | × |
| Comparative example 14 | 45 | 17.3 | 1.5 | ○ | Δ | ○ |
| Comparative example 15 | 23 | 7.5 | 10 | Δ | Δ | × |